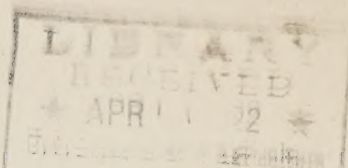


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MEXICAN BEAN BEETLE



1. Mexican bean beetle (Epilachna corrupta Muls.) was discovered in Mexico in 1850. It occurs throughout Mexico and Central America to Colombia. Original habitat apparently similar to that of Mexican cotton boll weevil and Colorado potato beetle.
2. Mexican bean beetle occurs in New Mexico, Arizona and Colorado also. It has been confined within that territory for many years by surrounding semi-arid or desert conditions without food plants to facilitate spread.
3. Species spread to Alabama by commercial agencies (probably alfalfa hay shipments) in 1918 -- not before. Discovered by Alabama Experiment Station July 1, 1920. Then limited to small parts of two counties, but seriousness of occurrence was realized.
4. By November 1, 1920, species had spread through all or part of 13 Alabama counties and probably occurred at one point in south Georgia, one point in north-west Georgia and one point in southeastern Tennessee also.
5. Dissemination was amazingly rapid in early summer of 1921, extending more than 250 miles beyond 1920 infestation. By January 1, 1922, known to occur in 35 Alabama counties, 36 in Georgia, 34 in Tennessee, 2 in Kentucky, 2 in North Carolina, and 3 in South Carolina.
6. Insect life zones depend primarily upon altitude, latitude, temperature, and rainfall conditions. The Mexican bean beetle already ranges from 8,000 feet altitude and 41 degrees latitude in northern Colorado to 100 feet altitude and 31 degrees latitude in south Georgia. Northern limit is in latitude of Philadelphia, Pa. Temperature range is from 30 to 35 degrees below zero to 110 degrees F. Rainfall range is from approximately 20 inches annually to over 60 inches annually.
7. Prospective spread, based on 1920 and 1921 movement, indicates Michigan and New York bean areas may be reached by 1924 or 1925 and within five or six years the species may be generally distributed from Florida to Maine and westward to Mississippi River.
8. As to food and breeding habits, in Colorado and other Western States attack is confined practically to table beans and not over two generations are produced annually between June 16 and September 15. In Alabama, however, important new food plants include cowpeas, beggar weed, and soy beans, ^{and} occasionally on sweet clover and alfalfa. Here, also, four generations are produced with continuous breeding from latter part of March to first of November.
9. Natural control is very slight and not likely to become effective. Both larvae and adults are distasteful to birds and repel most predacious insects. Reproduction is therefore very rapid and may extend to 1600 eggs per female.
10. Artificial control is unusually difficult and not yet worked out sufficiently to allow making recommendations. Control studies should be continued intensively and range in variety of field conditions extended.
11. Destructiveness: In Alabama in 1920 and 1921, snap beans and shell beans, 80 per cent destroyed; lima beans, 65 per cent; California black-eyed peas, 25 per cent; field cowpeas and soy beans, 5 to 10 per cent.

12. Navy beans and other dried beans, including lima beans, also snap beans, produced both commercially and in home gardens, may be practically exterminated by this insect.

13. Total money value of these crops not less than 100,000,000 annually, exclusive of soy beans and cowpeas. Conservative estimate of potential bean beetle damage not less than \$50,000,000 annually on table beans alone.

14. Even with present infestation, the retail price of snap beans in 1921 within the infested area was practically double average price immediately outside.

15. True economy demands that investigational work now under way by Bureau of Entomology should be not only continued but rather extended with present trained staff available to include the full range of geographical and climatic conditions where species now occurs.

16. This problem promises ultimately to become even more serious in effect than the gypsy moth, Hessian fly, European corn-borer or Mexican cotton boll weevil.

17. All sections of United States are concerned because of the importance of these legume food plants for human food, animal forage, and renewal of soil fertility.

18. Therefore, entomologists representing all cotton States, through me, express their conviction that a supplemental approximation of at least \$25,000 is needed for the most effective and economic prosecution of this investigation.

W. E. HINDS,

Entomologist, Alabama Experiment Station and
President Association Cotton States Entomologists.

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February 17, 1922.

12. Many persons and other related persons, including their names, also may be included in the investigation and in some instances, may be personally interviewed by the Bureau.

13. Total money value of these crops was less than \$100,000,000 annually, exclusive of any other crops. Comparative statistics of general U. S. crop yields were not less than \$25,000,000,000 annually on this basis alone.

14. Even with present information, the retail price of such crops in 1931 within the United States was practically double average prices immediately preceding.

15. The agency demands that investigations be made under way by Bureau of Entomology and Plant Quarantine, not only to determine the reasons existing with present conditions in all available to include the full range of geographical and climatic conditions where crops are grown.

16. This problem presents itself to become even more serious in other than the crop world, Mexican fig, European corn-borer or Mexican cotton boll weevil.

17. All sections of United States are concerned because of the importance of these crops and the loss for human food, animal crops, and removal of soil fertility.

18. Therefore, entomologists representing all cotton States, through me, express their conviction that a systematic investigation at a total cost of \$25,000 is needed for the most effective and accurate protection of this investigation.

W. E. HINES

Entomologist, Alabama Department of Agriculture and
President Association Cotton of the United States.

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February 14, 1932.